

Marked-Up Version of Amended Claims 1, 6, 11, 16, 25; 26; and 35

1 (Once Amended). A programmable blood processing system coupled to a blood separation device comprising

a cassette containing [several] first and second preformed, pneumatically actuated pump stations, [several] more than two preformed fluid flow paths, and [several] more than two preformed, pneumatically actuated valves in the fluid flow paths, and

a programmable pneumatic actuator to hold the cassette and selectively apply pneumatic force to the valves and pump stations in response to a control program to place [any selected] the first pump station in flow communication with any fluid flow path and the second pump station in flow communication with any fluid flow path [selected pump station].

6 (Once Amended). A programmable blood processing system coupled to a blood separation device comprising

a cassette containing [several] first and second preformed, pneumatically actuated pump stations, [several] more than two preformed fluid flow paths, and [several] more than two preformed, pneumatically actuated valves in the fluid flow paths,

a programmable pneumatic actuator to hold the cassette and selectively apply pneumatic force to the valves and pump stations in response to a control program to place [any selected] the first pump station in flow communication with any fluid flow path and the second pump station in flow communication with any fluid flow path [selected pump station], and

a controller having a first selectable control program to direct the pneumatic actuator to apply pneumatic force to the valves and pump stations to perform a first blood separation procedure, the controller also having a second selectable control program to direct the pneumatic actuator to apply pneumatic force to the valves and pump stations to perform a second blood separation procedure different than the first blood separation procedure, whereby the preformed pump stations, preformed fluid flow paths, and preformed valves in the cassette can accommodate different blood processing procedures.

11 (Once Amended). A programmable blood processing system coupled to a blood separation device comprising

a cassette containing [several] first and second preformed, pneumatically actuated pump stations, [several] more than two preformed fluid flow paths, and [several] more than two preformed, pneumatically actuated valves in the fluid flow paths, the system being configured to place a first pump station in communication with any fluid flow path and a second pump station in communication with any fluid flow path, an

a programmable pneumatic actuator to hold the cassette and selectively apply pneumatic force to the valves and pump stations in response to a control program to direct fluid flow through any selected pump station in either a forward direction between two valves, or a reverse direction between two valves, or an in-out direction through a single valve.

16 (Once Amended). A programmable blood processing system coupled to a blood separation device comprising

a cassette containing [several] first, second, and third preformed, pneumatically actuated pump stations, [several] more than three preformed fluid flow paths, and [several] more than three preformed, pneumatically actuated valves in the fluid flow paths, and

a programmable pneumatic actuator to hold the cassette and selectively apply pneumatic force to the valves and pump stations in response to a control program to place the first pump station in flow communication with any fluid flow path and the second pump station in flow communication with any fluid flow path.

[a programmable pneumatic actuator to hold the cassette and selectively apply pneumatic force to the valves and pump stations in response to a control program] the system being configured to simultaneously place two of the pump stations in flow communication with the blood separation device while simultaneously placing [a] the third pump station in flow communication with a venipuncture.

25 (Once Amended). A programmable blood processing system coupled to a blood separation device comprising

a cassette containing [several] first and second and third preformed, pneumatically actuated pump stations, [several] more than three preformed fluid flow paths, and [several] more than three preformed, pneumatically actuated valves in the fluid flow paths, and

a programmable pneumatic actuator to hold the cassette and selectively apply pneumatic force to the valves and pump stations in response to a control program to place [a] the first, second, and third pump stations in communication with any fluid flow path [an inlet of the blood separation device to supply blood to the separation device for separation into components, a second pump station in communication with],

the system being configured to place the first pump station in communication with an inlet of a blood separation device to supply blood to the separation device for separation into components, to place the second pump station in communication with an outlet of the blood separation device to withdraw a blood component from the blood separation device, and [a] to place the third pump station in communication with a venipuncture to supply and return blood to a donor.

26 (Once Amended). A system according to claim 25

Serial No. 09/390,268
Amendment A

wherein the programmable pneumatic actuator selectively applies pneumatic force to the valves and first [and], second and third pump stations to simultaneously supply blood to and withdraw blood from the separation device.

35 (Once Amended). A blood processing method comprising the steps of

providing a cassette containing [several] first and second preformed, pneumatically actuated pump stations, [several] more than two preformed fluid flow paths, and [several] more than two preformed, pneumatically actuated valves in the fluid flow paths, whereby the first pump station may be placed in flow communication with any fluid flow path and the second pump station may be placed in flow communication with any fluid flow path, and

placing the cassette in association with a pneumatic actuator to selectively apply pneumatic force to the valves and pump stations,

providing a first selectable control program to operate the pneumatic actuator to perform a first desired blood processing procedure using the cassette including conveying blood through a separation device for separation into a first component part, at least a portion of which is collected, and

providing a second selectable control program to operate the pneumatic actuator to perform a second desired blood processing procedure using the cassette including conveying blood through a separation device for separation into a second component part, at least a portion of which is collected.

REMARKS

Claims 1, 6, 11, 16, 25, 26, and 35 have been amended. In compliance with 37 C.F.R. §121(c)(3), a clean version of the entire set of pending claims is being submitted, as is a marked-up version showing changes in the amended claims relative to the previous version of the claims.

Claims 1 to 38 remain in the application. Of these, claims 1, 6, 11, 16 and 25 are independent apparatus claims and claim 35 is an independent method claim.

Claims 1 to 38 are rejected based upon various combinations under 35 U.S.C. §102(b) based upon Kamen et al. U.S. Patent 5,628,908 (Kamen '908) and under 35 U.S.C. §103(a) based upon Kamen '908 in view of Dennehey et al. U.S. Patent 5,462,416 (Dennehey '416) or Kamen '908 in view of Dennehey '416 and further in view of Brierton et al. U.S. Patent 5,795,317 (Brierton '317).

Independent claims 1, 6, 11, 16 and 25 have been amended to overcome these rejections. In particular, these claims have been amended to define systems and methods that include, in a cassette, at least two preformed, pneumatically actuated pump stations, at least more than two preformed fluid flow paths, and at least more than two preformed, pneumatically actuated valves in the flow paths, which can be configured using an actuator to place any given pump station in communication with any fluid flow path. Kamen '908 discloses a system having multiple pump chambers P1 and P2 and multiple fluid paths F1 to F9 (see Col. 7, lines 51-58). However, the device of Kamen '908 does not permit communication between any given pump station and any fluid flow path. In fact, Kamen '908 teaches away from such a system. Fluid paths F6 and F8 in Kamen '908 are associated only with pump chamber P1, while fluid paths F7 and F9 are associated only with pump chamber P2 (see Col. 8, lines 15-22). Isolated fluid paths in Kamen '908 are purposefully arranged to isolate the patient's peritoneal cavity from air that collects in pump chambers P1 and P2 and to transfer the air out of P1 and P2 (see Col. 9, line 59 to Col. 10, line 4). Therefore, a system permitting communication between any pump station and any fluid flow path would not meet the objectives of the Kamen '908 device. In Dennehey '416 and Brierton '317, there are no preformed, pneumatically actuated pump stations, and there is no motivation in these documents leading one to substantially redesign the cassettes by removal of the peristaltic tube loops and their replacement with preformed, pneumatically actuated pump stations.

A Supplemental Information Disclosure Statement accompanies this Amendment. The Statement seeks to make of record references cited in Therakos Brochure document, circa 1989. The Therakos Brochure document was cited in an Information Disclosure Statement that was submitted in this application by mailing on June 14, 2002.

Serial No. 09/390,268
Amendment A

Allowance of claims 1 to 38 is respectfully requested.

Respectfully submitted,

By



Daniel D. Ryan
Registration No. 29,243

RYAN KROMHOLZ & MANION, S.C.
P.O. Box 26618
Milwaukee, Wisconsin 53226-0618
September 2, 2002
390268a.ddd